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NINETEENTH ANNUAL REPORT

OF THE

Board of Fire Commissioners

TO THE

MAYOR AND CITY COUNCIL

OF BALTIMORE,

FOR THE YEAR ENDING DEC. 31, 1877.

BALTIMORE:
PRINTED BY JOHN COX,
CITY PRINTER,
Corner Pratt Street and Spear's Wharf.

1878.

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Officers of the Fire Department.

FIRE COMMISSIONERS, (Honorary.)

JOHN T. MORRIS, PRESIDENT.

JAMES A. BRUCE, TREASURER.	HUGH GIFFORD,
THOMAS W. CAMPBELL,	SAM'L W. REGESTER.

Chief Engineer,

JOHN M. HENNICK.

Assistant Engineers,

GEORGE W. ELLENDER, GEORGE F. THOMPSON.

Secretary and Clerk,

GEORGE A. CAMPBELL.

REPORT.

Office Board of Fire Commissioners,
Baltimore, January 1, 1878.

To the Honorable the Mayor and City Council:

Gentlemen:

The Board of Fire Commissioners beg leave respectfully to submit for your consideration the nineteenth annual report of the Baltimore City Fire Department for the fourteen months ending December 31st, 1877. By reference thereto you will be enabled to ascertain the expenses of running the department for the period named; the estimates of expenses for the fiscal year of eighteen hundred and seventy-eight; the number of fires, the losses caused thereby, the condition of the department, together with a great deal of useful information, not only of interest to yourselves, but also of great importance to the citizens of our city.

During the past year there has been no change in the composition of the Board.

The force of the department remains unchanged, consisting of thirteen (13) Engine Companies and three (3) Hook and Ladder Companies, with a membership of one hundred and ninety-nine (199) men. There are connected with the companies a number of substitutes, who serve in the place of the reglar men, when the latter are off duty; they will average about five to a company. These substitutes are a valuable auxiliary to the companies, as it enables them to get into service very often when the regulars are late in getting to fires. As the department is now constituted the enginemen, assistant enginemen, tillermen and hostlers are required to be on duty at all times, except such hours as are allotted to them for meals; whilst the foremen, firemen and laddermen are paid to do duty at fires when the alarm is sounded, and are very often late in responding, so that with an addition of five substitutes to each, the companies are not kept waiting, when very often they would be, if not for this addition. They are in the line of promotion according to attendance and general good behavior, and the Board has always tried to select the best men that can be had for these places. It is true a great many could be gotten, but they are not of that class of men to whom the property of our citizens could be entrusted at times of fire, as they have all the privileges of the regulars on the fire ground. It may be well, also, to state that in case of disability from injuries received in the service, they are paid the same wages as the regulars, out of the accident fund, when so disabled.

In conformity with the ordinance made for that purpose by the Honorable City Council, the Board again effected an insurance on the lives of the foremen, firemen and laddermen. There were forty-seven (47) cases of accident during the past fourteen months, which were reported to the insurance companies, who promptly paid the indemnity. There was only one death, and that from natural causes. The insurance on the lives of the members is considered by the Board as a wise measure on the part of the City Council, as it not only pays to each member named above the sum of five dollars per week whilst disabled, but also the sum of five hundred dollars in case of death therefrom, and makes the men brave danger the more, knowing that those depending on them will be provided for in case of accident happening to them. In addition to the five hundred dollars paid by the insurance companies, there is also paid to them the sum of five hundred dollars from the Accident Fund, making one thousand dollars in case of death from accident.

The apparatus of the department consists of thirteen (13) engines, thirteen (13) first hose carriages, and three (3) hook and ladder trucks, in regular service, and four (4) reserve engines, thirteen (13) second hose carriages, and one reserve truck. The reserve apparatus is used instead of the regular, when the latter is out of service for repairs and other necessities. In addition to this there are four fuel wagons, used to supply the engines at fires whilst in service. There are also in service in the department ten (10) steam heaters, used for the purpose of keeping the water at a boiling point, which has been found of great importance in getting the engines quickly into service, and several disastrous fires have been averted by their use. The apparatus is all in first-class condition; some of the engines, however, have been in service since the formation of the department, and particular attention is paid to them; these, however, are used as reserves, but are always kept in as good order as possible, as they are apt to be called into service at any time, and expected to do as well as the regular engines. Several have had new flues put in the boilers, and other necessary alterations made to put them in first-class order.

We have in service in the department sixty-six (66) horses in regular service, and six (6) spare ones, all in first rate condition. The care of the horses is committed to the special charge of Mr. Thomas W. Humphreys, a very competent veterinary surgeon, instead of calling in the services of a surgeon whenever wanted; this new system being a great saving to the department. The duty of the above named gentleman being to visit all the horses daily, and see that everything pertaining to the horses is in a first-class condition.

There are eleven thousand nine hundred and fifty (11,950) feet of good hose in service, and fourteen thousand one hundred and fifty (14,150) feet of medium; the former is used on the first carriages, the latter is used on the second carriages. There was purchased since the last report fifty-eight hundred (5,800) feet, forty-eight hundred of gum, and one thousand of cotton.

There were two hundred and eleven (211) telegraphic alarms of fire, and two hundred and nine (209) silent alarms, for the fourteen months ending December 31st, 1877, and the total loss occasioned thereby amounts to $438,715.57. The greatest loss at any one fire was caused by the burning of the Patapsco Guano Works in March last, which amounted to $116,000,00. The next greatest loss occurred in May last, caused by the destruction of Brown & Bros.' Drug and Chemical Warehouse, Sharp street near Lombard; the loss at this fire amounted to $64,000; this same warehouse was burned out in May, 1876, causing a loss of nearly $225,000. The losses by fire ending twelve months to October 31st, 1876, amounted to $563,248.78, which shows a smaller amount of loss for the past fourteen months than occurred in the twelve months preceding. On Monday, September 24th last, at 12.10 o'clock P. M., a telegram was received from Honorable Carl Schurz, Secretary of the Interior, Washington, D. C., stating that the United States Patent Office was in flames, and calling on us for assistance. An alarm from Box 13 was at once struck out from the City Hall—main office—for the purpose of calling the engines to the Baltimore and Ohio Railroad Depot. Nos. 1, 2, 3 and 4 Engine companies were sent to their assistance as soon as transportation could be furnished, and arrived there in good time, and succeeded in rendering valuable aid.

The engine and truck houses are in a good condition, and will not require a very large amount for repairs. We cordially endorse the recommendation of the Chief Engineer with reference to the alteration of the stalls in the engine and truck houses, so that the horses will face the apparatus.

On March 14th last an ordinance was passed by the Honorable City Council, transferring the government and control of the Police and Fire Alarm Telegraph to the charge of Fire Commissioners, or in other words, making it, what it really should have been long ago, a part and parcel of the Fire Department; it was formally turned over to the Fire Commissioners about the first part of April. The new Fire Alarm Telegraph was completed in the month of November last, and turned over to the representatives of the city appointed for the purpose—the Mayor, Comptroller and Register. The amount paid to the contractors for the same was $55,000, and the cost of fitting up the new office, battery rooms, &c., was about $1,400. Before being accepted by the city it was given a thorough test, not only the Superintendent of Telegraph, but also by two experts, appointed by the Mayor, Comptroller and Register. These experts, after a careful examination, pronounced it a first-class piece of mechanism in every respect. The completion of this new line relieves a necessity long felt in the Fire Department. The old line, having been in use since the formation of the present Fire Department, was pretty thoroughly worn out, and considered very unreliable; whilst the new line works well in every respect, and it is a source of pride to say in this respect that the new Fire Alarm Telegraph of the City of Baltimore is the equal, if not the superior, of any in the United States.

On the 29th of November last there was a parade and review of the entire Fire Department, given before the Honorable Mayor and City Council, the Board of Fire Commissioners, and several of the Heads of Executive departments of other cities. The officers and members were equipped in full parade uniform, and looked and marched well. The apparatus and horses were in elegant condition, and reflected great credit on those having charge of the same. The Board is of the opinion that these reviews are of great benefit, as it makes the men take great pride in the property under their charge, and has a tendency to have it always in a first-class condition, not knowing at how short a notice they may be called upon to exhibit it. The men are made to feel that there is an interest taken, and their services are appreciated by our citizens who witness their evolutions, and who always feel a pride and point with pleasure to a well regulated institution. It has therefore been ordered that there shall take place an annual parade of the entire Fire Department, also semi-annual parades for each district respectively.

The Board deems it its duty to again call your attention, and recommend the thorough enforcement of the Building Law to put a stop to the erection of unsafe buildings, that are daily erected in the streets of our city; as they will not only be the means of spreading fires that may occur at any time, but are considered dangerous to life and limb. The Board called the attention of the Honorable City Council to this in its previous report and strongly urged its enforcement.

The Board in its last report also called the attention of the Honorable City Council to the existence of several box factories, and other very inflammable buildings located in the centre of the city amid some of our most valuable warehouse property. Although action was taken by the late Mayor, to remove these buildings, by revoking the permits previously granted, yet upon hearing of the matter before the courts, he was enjoined from taking further adverse action on the subject. In the meantime the buildings continue to be a standing menace to the surrounding property, and in case of fire, might partly cause a most extensive conflagration.

The law to compel the owners or managers of hotels, theatres, churches and other public places, to see that proper egress is afforded for use in case of fire, should also be well considered. An Act to compel them to have necessary appliances for the safety of life and limb, should also be taken into consideration. The people of this country of late years have had experience enough in this matter to make them more alive to what is needed in this respect. The burning of the Brooklyn Theatre, also of the Grand Southern Hotel in St. Louis, should be evidence enough of that thief of time, procrastination, which makes us all too dilatory. The Honorable City Council at its last session contemplated the passage of such a law, and it was prepared; it is a very wise one indeed, and no time should be lost in giving it careful consideration. Very often when a fire takes place, instead of sounding the alarm, and then trying to subdue or prevent its spread, the latter is generally done before the former, as a great many instances have shown. This good suggestion is therefore not out of place.

The appropriation for the Fire Department, for the fiscal year ending Oct. 31st, 1877, was.....	$160,000 00
Special resolution passed March, 1877, to equip a new Hook and Ladder Co........................	2,800 00
Appropriated..	$162,800 00

Amount drawn from City Register to October 31st, 1877		156,378 23
Underdrawn October 31st, 1877		$6,421 77
Amount drawn from City Register for November and December, 1877		$ 29,077 36
Amount drawn from same source for fiscal year ending October 31st, 1877		156,378 23
Amount drawn 14 months ending Dec. 31, 1877		$185,455 59
We have also received in addition to the amount drawn from the City Register, from fines, horses, sale of uniforms, manure, and other sources, which is to be seen in the table "Receipts from all Sources," the sum of		$ 5,993 13
Add from City Register		185,455 59
Makes receipts from all sources		$191,448 72
Amount of expenditures for fourteen months ending December 31st, 1877	$187,590 32	
Amount paid City Register, fines, uniforms, manure, &c	3,203 76	
		$190,794 08
Balance Dec. 31st, 1877, (which consists of stock in store room,)		$654 64
The estimate of expenses for the fiscal year 1878, for the Fire Department, amount to		$160,338 00
For Fire Alarm Telegraph		12,720 00
Amount to equip new truck		2,800 00
Total amount asked for		$175,858 00

By reference to the aforegoing statement, it will be seen that the amount received from fines, sale of uniforms, manure, &c., is $5,993.13, and the amount paid over to the City Register is only $3,203.76; this can be explained in the following manner: The amount paid to the City Register is only from March 1st, 1877; the new law of the Council compelled all amounts from outside sources to be paid to the City Register on and after that date; prior to that, the receipts of this kind of the Fire Department, were credited in the general receipts, and accounted for in the general disbursements.

The estimate of expenses of the Fire Department, for 1878, is based upon the expenditures for twelve months, deducted from the expenses of the past fourteen months, viz: Taking $187,500.00 in round figures, as the expenses for fourteen months, by deducting the expenses of the Telegraph Department for November and December, 1877, leaves the sum of about $187,000.00; now by deducting two months expenses for the Fire Department, or one-seventh, leaves the sum of about $161,000.00, in round figures, thus showing that the Board has used great judgment, and taken pains to appropriate the necessary expenses for the next fiscal year. It is an estimate, and as such, it should be understood. There are many things in it that can be calculated very closely, but there are others, such as hose, apparatus, and apparatus repairs, which cannot be; the estimates for which therefore cannot be made less than the figures named or asked for.

No part of the amount appropriated for the equipment of the new truck company, passed at the last session, has been drawn from the City Register, as will be seen in the financial statement. The truck, however, is being built and will be ready for delivery very soon. It may be well to remind your Hononable Body, in this connection, that it will be necessary to pass an ordinance to establish this proposed new Hook and Ladder Company, to be located in No. 13 Engine house, at the intersection of Fremont street and Myrtle avenue. The resolution, as passed in March, 1877, simply called for the equipment, but not for the establishment of it. The Board is ready to form the company in short notice, which will be of great use in the north western section of the city. When the ordinance is passed, an amount to cover salaries and running expenses for the balance of the year, will necessarily be required to be appropriated, which is not included in the estimate of expenses for the coming year.

Appropriations and Receipts for the fourteen months ending December 31st, 1877.

Appropriated by the City Council for the fiscal year ending October 31st, 1877	$160,000 00
Special resolution, passed March, 1877, to equip new Hook and Ladder Company	2,800 00
Appropriated	$162,800 00
Amount drawn from City Register to October 31st, 1877	156,378 23
Undrawn October 31st, 1877	$6,421 77

Amount drawn from City Register to October 31st, 1877	$156,378 23
Amount drawn for November and December	29,077 36
Amount drawn 14 months to Dec. 31, 1877	$185,455 59

RECEIPTS FROM ALL SOURCES.

Balance October 31st, 1876	$ 1,054 25
City Register	185,455 59
Fines	1,096 60
Sale of uniforms	2,175 89
Sale of horses	900 00
Sale of stable manuue	215 00
Sale of old hose, &c	146 44
Insurance indemnity	404 95
Total	$191,448 72

Receipts from all sources	$191,448 72
Amount paid out	190,794 08
To balance	$654 64
To balance December 31st, 1877, which consists of stock in store room	$654 64

Expenditures for the fourteen months ending Dec. 31st, 1877.

Salaries	$129,656	06
Apparatus	5,496	74
Apparatus repairs and alterations	11,433	58
Stationery, printing and advertising	483	33
Accident fund	1,558	55
Feed	8,205	88
Fuel	1,772	90
Furniture	1,734	82
Harness and repairs	1,040	99
Horse shoeing	1,696	68
Hose	5,563	66
Horses	5,631	16
Gas light	1,068	25
Medicines	31	76
Oils, grease, paints, &c	1,171	37
Office expenses, (including pay of Messenger,)	510	85
Washing	1,348	60
Ground rent	1,106	24
Water rent	336	60
Fire Alarm Telegraph, (Nov. and Dec.)	1,492	80
Insurance premium	2,250	00
Insurance indemnity	404	95
Uniform account	2,527	72
Bells	214	41
Miscellaneous	852	42
	$187,590	32
Paid City Register, fines, uniforms, &c	3,203	76
	$190,794	08

Company expenses for the fourteen months ending Dec. 31, 1877.

Engine Company No. 1	$11,057 58	
“ “ “ 2	11,399 80	
“ “ “ 3	10,875 68	
“ “ “ 4	13,701 69	
“ “ “ 5	10,257 59	
“ “ “ 6	10,278 72	
“ “ “ 7	11,158 35	
“ “ “ 8	9,620 22	
“ “ “ 9	10,796 59	
“ “ “ 10	11,648 54	
“ “ “ 11	10,215 85	
“ “ “ 12	10,486 16	
“ “ “ 13	10,357 37	
Hook & Ladder Company No. 1	9,273 01	
“ “ “ “ 2	9,009 62	
“ “ “ “ 3	8,720 98	
Reserves	2,869 00	
		$171,726 75
Stationery, printing and advertising		483 33
Office expenses		510 85
Police and Fire Alarm Telegraph, (November and December,)		1,492 80
Insurance indemnity		404 95
Uniform account		2,527 72
Miscellaneous		852 42
Officers, salaries, repairs, &c		9,591 50
		$187,590 32

Expenses Police and Fire Alarm Telegraph for the year ending October 31st, 1877.

Appropriated :—		
Salaries	$8,400 00	
Batteries	1,500 00	
Repairs	1,200 00	
Incidentals	75 00	
Unpaid bills, 1876	694 49	
		$11,869 49
Amount to cover deficiency bills, 1877, passed November, 1877		84 12
Total		$11,953 61
Amount drawn		$11,953 61

SPECIAL APPROPRIATIONS NEW TELEGRAPH OFFICE.

Amount appropriated (special) for fitting up new office, &c	$700 00
Amount appropriated (special) to cover deficiency for fitting up office, battery, &c	653 96
	$1,353 96
Amount drawn	1,345 46
Undrawn	$8 50

The estimated amount of Appropriations required for the Baltimore City Fire Department for the fiscal year 1878, *is as follows:*

Salaries		$110,850 00
Apparatus		5,500 00
Apparatus repairs and alterations		10,000 00
Accident		1,800 00
Feed		8,000 00
Furniture		1,000 00
Harness and repairs		1,200 00
Horse shoeing		1,500 00
Hose		5,000 00
Horses		3,500 00
Gas light		1,000 00
Medicines		100 00
Office expenses, (including pay of Messenger,)		600 00
Water rent		388 00
Washing		1,350 00
Fuel		2,500 00
Bells		500 00
Oils, grease, paints, &c		1,250 00
Miscellaneous		850 00
Insurance premium		2,250 00
Ground rents		1,200 00
		$160,338 00
POLICE AND FIRE ALARM TELEGRAPH.		
Salaries	$8,400 00	
Repairs	500 00	
Battery	3,820 00	
		12,720 00
Resolution to equip new Hook and Ladder		2,800 00
Total		$175,858 00

We beg to refer to the accompanying reports of the Chief Engineer and Superintendent of Telegraph for valuable statistics in reference to the department under their charge.

We also desire to return our thanks to the above named officers, and to those associated with them, for their fidelity and energy in the performance of their several duties.

We also desire to acknowledge the valuable servies rendered by the Police Department of our city, and take this means of returning our thanks.

The officers and members of the Fire Insurance Salvage Corps will also accept our kind wishes for their valuable aid.

We again desire to acknowledge the kind attention and consideration shown to the Fire Department both by the Honorable Mayor and City Council, the Comptroller and Register, and the heads of the departments of the city government, who have all shown a great interest in the welfare of the Fire Department.

Respectfully submitted.

JOHN T. MORRIS, *President.*
THOMAS W. CAMPBELL,
JAMES A. BRUCE,
HUGH GIFFORD,
SAMUEL W. REGESTER,
Board of Fire Commissioners.

TEST:

GEO. A. CAMPBELL,
Secretary.

Chief Engineer's Report.

REPORT.

Baltimore, January 5th, 1878.

John T. Morris, Esq., President

of the Board of Fire Commissioners.

Dear Sir:

I herewith present to your honorable body the Nineteenth Annual Report of the Fire Department for the fourteen months ending December 31st, 1877, showing the condition of the apparatus, the quantity and condition of the hose, the number of fires and accidents to members and other matter appertaining to the Department.

The effective force of the Department consists of one hundred and ninety-eight men, classified as follows:

One Chief Engineer.
Two Assistant Engineers.
Thirteen Foremen of Engine Companies.
Three Foremen of Hook and Ladder Companies.
Thirteen Enginemen.
Thirteen Assistant Enginemen.
Sixteen Hostlers.
Three Tillermen.
One Hundred and Four Firemen.
Thirty Laddermen.

They are divided into sixteen companies, thirteen of which are Engines and three Hook and Ladder.

The apparatus being divided as follows:

Thirteen steam fire engines in regular service.
Four steam fire Engines in reserve.
Ten Steam Heaters for Engines.
Twenty-six four wheel hose carriages.
Four fuel wagons.
Three Hook and Ladder Trucks in regular service.
One Hook and Ladder Truck in reserve.
One Supply wagon.

HOSE.

11,950 feet of gum hose in good condition.
13,100 feet of gum hose in medium condition.
1,000 feet of cotton hose in medium condition.

HOSE PURCHASED.

5,800 feet gum hose, 500 feet of this hose was to replace hose burned up at the coal oil fire, June 1st, Box 82.
1,000 feet of canvas hose.

HORSES.

66 in service, 6 in reserve.

FIRES.

The number of alarms during the past fourteen months was 420, of which 211 was telegraph alarms and 209 were extinguished without giving a telegraph alarm.

The estimated loss for which we are indebted to Fire Inspector Holloway is $438,715.57, which is a decrease of $124, 533.21, compared with the twelve months in 1876, when the losses were $563,248.78. Twelve extensive conflagrations have occurred during the past fourteen months requiring second and general alarms as follows:

January 17th, 1877.—Box 72. Renwick's Furniture Factory, Howard street and Lerew alley. Second alarm and general alarm.

February 6.—Box 8. Mason's Cracker Bakery and Bates' Iron Foundry, corner President and Stiles streets. Second alarm.

March 1st.—Box 59. Parrish Bros., Spice and Mustard Mills, 12, 14, 16 and 18 Hollingsworth street. General alarm.

March 4th.—Box 63. Patapsco Guano Works, Philpot street. General alarm.

March 13th, Box 4, W. D. Shurtz and Jesse Lazear, four story warehouse, 11 Commerce street. General alarm.

March 29th.—Box 42. Tyson's Chrome Works, corner of Block and Point streets.

May 31st.—Box 3. Brown & Bros., Drug Store, 25 south Sharp street. General alarm.

June 1st.—Box 82. Mrs. C. Hunt and other Coal Oil Works, corner Canton avenue and Eden streets. General alarm.

July 20th.—Box 13. Baltimore and Ohio Railroad Depot cars and engines. Second alarm.

July 22d.—Box 94. Maughlin & Co., and Cate & Co., Lumber Yard and Plaining Mills, corner Stiles and East Falls avenue. General alarm.

On the 24th of September, at 12.10 P. M., a telegraph dispatch was received from the Hon. Carl Shurz, Secretary of the Interior, stating that the Patent Office was in flames and calling for aid. I immediately ordered Box 13 to be struck out, this being the nearest box to the Baltimore and Ohio Railroad Depot. Nos. 1 and 2 Engines were sent to Washington on the first train, followed forty minutes after by Nos. 3 and 4. Upon their arrival in Washington, they went in service on the Livery Stables on G street, near Seventh. The conflagration was stopped at this point. The Engines were in service three hours and returned to Baltimore at 10.10 P. M., the same day.

October 23d, '77.—Box 46. Jas. Musgrave's Tannery, north Front street, near Gay street. Second alarm.

December 22d, '77.—Steamboat Shirley and Piers, corner Light and Pratt streets, containing a large quantity of cotton, coal oil and other freight. Second and general alarms.

REPAIRS AND ALTERATIONS.

No. 1 Engine.—New set of composition metal flues in boiler, and other alterations.

No. 3 Engine.—New set of iron flues in boiler.

No. 7 Engine.—New set of composition metal flues in boiler.

No. 8 Engine.—New set of composition metal flues in boiler.

No. 10 Engine.—New boiler, steam cylinder and other alterations.

No. 12 Engine.—Alteration to vaccum chamber.

The Three Hook and Ladder Trucks have been rebuilt to carry bank ladders, three new sets of ladders have been furnished for them.

One new fuel wagon to supply engines at fires.

Four new four wheel horse carriages have been built and distributed to the following Companies, Nos. 1, 2, 4 and 7 engines.

Three new steam heaters have been built for the following Companies, one to each, Nos. 2, 4 and 9 engines.

HOUSES.

The stalls in No. 9 Engine and No. 2 Hook and Ladder Companies, have been altered so that the horses face the apparatus, this makes four houses that have been altered this way, and I would recommend that this alteration should be made in as many houses as possible, as many accidents occur in the horses turning around, when running to the apparatus. All the horses of the Department are loosened by the first stroke of the telegraph.

Nos. 2 and 3 Engine Companies houses require new floors, both in the engine room and stables. All the houses require painting.

CASUALTIES.

No. 1 *Engine Company.*—Nov. 18, Box 6—Engineman J. Yeaton; face cut; not off duty. March 25, Box 142—Fireman T. T. Northouse; hand cut; off duty six days. June 1st, Box 82—Substitute Wm. P. Dawson; hands burnt; off duty ten days. August 29, Box 28—Fireman E. R. Addison; internally injured; off duty thirty-three days. September 21, Box 6—Fireman L. Pistol; hand cut; off duty four days.

No. 2 *Engine Company.*—November 27, Box 24—Fireman C. Burbower; ankle sprained; off duty fifty days. February 18, Box 71—Fireman T. Bodenhi; hand mashed; off duty nine days. March 4, Box 63—Fireman S. Young; back sprained; off duty two days.

No. 3 *Engine Company.*—No casualties in this Company.

No. 4 *Engine Company.*—November 1st—Engineman J. Deal; injured internally; off duty twenty-three days. December 22d, Box 51—Substitute Thos. Howard; badly burned on face, arms and neck; off duty at this date.

No. 5 *Engine Company.*—March 4th, Box 63—Fireman Spafford; nearly suffocated; off duty five days.

No. 6 *Engine Company.*—Box 15, December 15th—Assistant Engineman Wm. Strebb; injured in breast; off duty three days. Box 94, July 22d—Fireman West; ankle sprained; off duty four months.

No. 7 *Engine Company.*—November 2d, Box 124—Fireman McGruvy; knee injured; off duty twelve days. March 1st, Box 59—Fireman S. Gildea; leg injured; off duty two days. March 29th, Box 72—Substitute Logue; foot and leg mashed; off duty nine days. Firemen Allen and Sheiks were slightly injured at the same fire; did not go off duty.

No. 9 *Engine Company.*—January 31st, Box 58—Foreman Kerr; injured in leg; off duty six days. March 30th, Box 15—Assistant Engineman Rogers; kicked by horse; off duty three days. October 20th, Box 126—Fireman Munberg; knee cap broken; off duty 72 days. December 24th, Box 51—Assistant Engineman Rogers; foot mashed; off duty four days.

No. 10 *Engine Company.*—April 28th, Box 14—Engineman Conway; foot sprained; off duty three days.

No. 11 *Engine Company.*—March 3d, Box 27—Fireman E. Smith; injured internally by being thrown from the hose carriage; off duty fourteen days.

No. 8 *Engine Company.*—Box 42, July 21st—Fireman G. Chapman; hand cut; off duty eleven days.

No. 13 *Engine Company.*—Box 75, December 9th—Driver Wm. Kusmaul; ankle sprained; off duty twenty days. Box 31, August 12th—Fireman G. Bowers; overcome by heat; off duty twenty-four hours.

No. 1 *Hook and Ladder Company.*—Box 5, September 23d—Ladderman C. Simpson; small bone in arm broken; off duty forty-five days. Box 15th, December 15th—Substitute Wm. Lockington; foot mashed; off duty seven days. Box 8, February 6th—Ladderman S. Disney; back sprained; off duty fourteen days. Box 59, March 1st—Ladderman Wm. Stewart; hand cut with glass; off duty six days. Box 59, March 1st—Substitute A. Chrismer; foot mashed by a ladder; off duty eight days. Box 63, March 4th—Ladderman C. Simpson; foot mashed; off duty two days. December 22d, Box 51—Ladderman S. Disney; hands burned; off duty nine days. May 28th—Ladderman S. Ward; foot injured by horse treading on it; off duty two days. June 23d—Foreman Mears; injured internally by ladder falling on him; off duty ten days.

No. 2 Hook and Ladder Company.—Box 81, January 1st—Ladderman W. Lashorne; ankle sprained; off duty twenty-eight days. Box 13, January 6th—Ladderman S. W. Friedhofer; injured internally; off duty seven days. Box 71, March 18th—Ladderman W. Lashorne; knee sprained; off duty twenty-five days. Box 3, May 31st—Substitute P. Hoofman; ankle sprained; off duty twelve days. Box 13, September 24th—Foreman G. Houck; ankle sprained; off duty four days. May 3d—Tillerman S. Gill; struck in the eye with wire; off duty two days.

No. 3 Hook and Ladder Company.—Box 63, March 4th—Ladderman Thomas Taylor; suffocated with sulphur; off duty four days. Box 63, March 4th—Ladderman Sam Foster; nail in his foot; off duty fifteen days. Box 4, March 13th—Ladderman R. Henrix; hand cut with glass; off duty thirty-five days. Box 7, October 25th—Ladderman John N. Downs; legs mashed; off duty six days. Box 67, March 9th—Substitute George Daunhauser; foot mashed; off duty thirty-four days. Box 4, March 13th—Substitute N. Sapp; overcome with heat and smoke; off duty one day.

DEATHS.

Wm. Smith, No. 8 Engine Company, died of consumption, March 11th, 1877.

Casualties, 49.

Number of days members were off duty injured, 716.

In conclusion, I desire to return my thanks to the members of the Board for their kindness shown to me at all times, and the very respectful manner in which they have entertained my suggestions during the past fourteen months. I also desire to return my thanks to the officers and members for the prompt manner in which they have obeyed orders, and also for their valuable co-operation in suppressing fires, and to Superintendent J. F. Morrison, for the prompt manner in which he has always attended to the wants of the Fire Department in connection with his own.

Respectfully submitted.

JOHN M. HENNICK,

Chief Engineer.

REPORT

OF THE

Superintendent of Police

AND FIRE ALARM TELEGRAPH.

REPORT.

Baltimore, Md., January 4, 1878.

The Honorable the President and Members
of the Board of Fire Commissioners:

Gentlemen:

I have the honor to submit herewith my annual report of the operations of the Police and Fire Alarm Telegraph for the fiscal year ending December 31st, 1877.

The pressing need for the reconstruction of the Police and Fire Alarm Telegraph had long been felt by the Fire Commissioners, as well as by the intelligent gentlemen appointed by them as officers of the Fire Department; but it has only been within the last few years that insurance-men, and the great body of citizens generally, have been brought to a realizing sense of the benefits derived from this most important adjunct to every well-ordered fire department.

The first steps to establish a system of Police and Fire Alarm Telegraph for this city were taken in the year 1857, directly after Farmer & Channing, of Boston, had practically demonstrated its utility in that city. Considerable opposition to its adoption was manifested in the Baltimore City Councils, and the project was finally defeated. Its friends, however, again introduced it into the Council of 1858, and an ordinance passed both Branches, and received the approval of the then Mayor—Hon. Thos. Swann—on the seventh day of December, appropriating thirty-three thousand dollars for the construction of a system of Police and Fire Alarm Telegraph.

This telegraph was constructed and placed in service on the first day of July, 1859, by Gamewell, Phillips & Co., and comprised fifteen miles of wire, connecting thirty street stations, or boxes of the pattern known as "crank" boxes. The central office was furnished with a small bell on each of the five circuits upon which to receive an alarm, and a Morse key, to which all the circuits were connected, to send it out again to the engine houses. This was done by tapping with the finger upon the key a number of times to correspond with the number of the station from which the alarm had been received. Additional wires had been added from time to time, and boxes put in, until at the time when I took charge of the telegraph—March, 1876—the system comprised five—the original five fire wires—with an aggregate length of thirty-seven miles of wire, exclusive of the police and quarantine lines. These wires carried eighty-two boxes, and a large number of engine house and private gongs—direct acting.

On the sixteenth of May, I was directed by his Honor Mayor Latrobe to make a thorough inspection of the telegraph system, and report its exact condition to him, together with an estimate of the probable cost of placing it in such order as to fulfil the requirements of the Fire Department. This report and estimate I subsequently laid before the Mayor, placing the cost of the work at $55,000.

His Honor was pleased to concur in my recommendations, and transmitted my report with a special message to the City

Council. The matter was referred to the Committee on Fire Department, who made the following report on the ninth day of October, 1876:

"The Joint Standing Committee on Fire Department, to whom was referred so much of the Mayor's communication, dated the eleventh day of September, 1876, as relates to the Police and Fire Alarm Telegraph, and also the communication of the Superintendent of the Police and Fire Alarm Telegraph, dated May 16th, having fully considered the same, respectfully report that they concur in the views set forth in the said communications on the present condition of the Police and Fire Alarm Telegraph, and are thoroughly convinced of the urgent necessity for immediate action on the part of the Mayor and City Council to reconstruct the same, and supply it with the modern facilities, in order to render it efficient for the accomplishment of the purposes for which the Fire Department was created. It is apparent, not only from the views expressed by those officers, but from the actual investigations of your committee, that the telegraph, as at present existing, is inadequate to afford that protection to the lives and property of the citizens of Baltimore, which it is the duty of the corporate authorities to supply.

"Since the construction of the present wires the city has expanded by the erection of vast improvements in almost every direction, especially in the north-eastern, and north and south-western sections. The wires as at present constituted are inadequate to be further taxed by the erection of additional fire alarm boxes, in those newly improved and now densely populated portions of the city. To delay longer in extending the telegraph to these sections of the city would be an unwise discrimination, as the inhabitants thereof, paying as they do their full proportion of the expenses of the department, are entitled to the enjoyment of their full share of its advantages.

"Although the work of reconstructing the department will entail what may be considered a large expenditure of money, yet the cost of the same is but a trifle when compared to the consequences which may result if the work is not done without further delay. The imperfect condition of the wires has been fully delineated by the Superintendent in his communication, and if there should be delay in remedying the evils which he points out, and serious loss and damage should ensue therefrom, it might rightfully be charged as an act of culpable negligence on the part of the corporation.

"The committee believe it to be their duty to meet their responsibility, and to recommend that immediate action be taken. They therefore submit the accompanying ordinance, and recommend its passage by the respective Branches of the City Council.

(Signed) JOHN S. HOGG,
M. W. DONAVIN,
JOHN G. GEHRING,
First Branch.

JOHN F. SOMERLOCK,
Second Branch."

The first section of the ordinance referred to is as follows, and contains the main points of the ordinance:

"Be it enacted and ordained by the Mayor and City Council of Baltimore, that the Superintendent of the Police and Fire Alarm Telegraph, with the approbation of the Mayor, Comptroller and Register of the City, be, and he is hereby, authorized and empowered to reconstruct the Police and Fire Alarm Telegraph of the city, according to the most approved system now in use, and to purchase all such machinery and apparatus for properly equipping the same as may be necessary for a thorough

Police and Fire Alarm Telegraph Department for the the City of Baltimore."

The third section of the ordinance provides "that before any money appropriated by this ordinance shall be expended, all contracts entered into by the said Superintendent, for or on account of the reconstruction and equipment of said Police and Fire Alarm Telegraph, shall be ratified and approved, and the bills therefor endorsed by the Mayor, Comptroller and Register."

Under the provisions of this ordinance, and with the approbation of the Mayor, Comptroller and Register, I engaged in correspondence with and received proposals from every prominent and well-known party engaged in the construction and sale of Police and Fire Alarm Telegraph. These proposals were submitted to the commission, composed of the above-named city officials, and opened in the presence of the parties offering them. The commission then referred the proposals to me, with instructions to report at once which of the systems proposed was in my judgment the most perfect, and best suited to our wants.

Acting under these instructions, I made the most careful examination of all the telegraphs offered. I also sought from those using such apparatus, as well as those connected with the manufacture and scientific testing of them, such information as they might be possessed of. Upon the facts and data thus obtained I made the following report:

BALTIMORE, MD., December 16, 1876.

To the Hon. Ferdinand C. Latrobe, Mayor,

Joshua Vansant, Comptroller, and

John A. Robb, Register, of the City:

GENTLEMEN:

I have carefully examined the proposals for the construction of a Police and Fire Alarm Telegraph for the City of Baltimore, which at a former meeting of your commission were referred to me for such information as I might possess, which would properly influence the awarding of a contract, and now propose to submit to you such facts concerning the several systems offered as I have been able to secure, together with an analysis of the bids.

The application of the telegraph to the transmitting of alarms of fire seems to have attracted the attention of persons interested in electrical science as early as the year 1843, when Alexander Bain procured an English patent for an apparatus, which, however, never produced any practical results. About the year 1851, Dumont & Hunter are mentioned as having procured letters patent for fire alarm telegraph, but nothing of practical value resulted from their experiments.

The first practical applications of the telegraph to this purpose were made in the year 1851, in the cities of New York and Berlin; that in the former city under the direction of Charles Robinson, and in the latter under the Siemens Brothers, eminent practical electricians. The system applied by these gentlemen was simply the outgrowth of the Morse telegraph, which was then struggling up to success, and consisted in connecting watch-towers together by a single Morse telegraph line, by means of which watchmen stationed in the towers could telegraph to each other the locality of a fire as observed from their elevated positions. The alarms were given upon bells rung by hand.

The present system of Fire Alarm Telegraph in use in Baltimore is that of Farmer & Channing, American patent of May, 1857.

Dr. Wm. F. Channing, of Boston, first gave his attention to this subject in 1845, one year after the introduction of the commercial telegraph by Prof. S. F. B. Morse, and published several articles that year, attempting to prove its feasibility. Three years later, in 1848, Mr. M. G. Farmer invented a method of ringing bells by electricity, and in an experimental trial the bell in the tower of the Boston City Hall was rung by an operator in New York. Again three years elapsed before anything practical had been achieved.

The first Fire Alarm Telegraph ever put in successful operation was that constructed under these inventions by the City of Boston in 1852. Since that time no change has been made in the system of Fire Alarm Telegraph, although many improvements have been made in the mechanical devices for carrying it into effect. That system comprised a central office or station, a series of signal-boxes at suitable intervals throughout the city, connected in one or more circuits with the central station, and a series of alarm bells connected with the central station on another circuit or wire.

The signal-boxes contained a circuit-breaking wheel, having on its periphery cogs or teeth, with interdental spaces so arranged that when the wheel was revolved by hand the circuit was broken in such a manner as to indicate the number given to the box making the signal. This number being received at the central station, was immediately transmitted over the bell circuits, bells being so struck as to indicate the box at which the alarm originated.

Like most other inventions the mechanism by which these functions was originally performed was crude and imperfect, and much time and labor were expended in improving it before it became sufficiently reliable to satisfy public criticism. In the year 1857, however, this result seems to have been achieved, and patents were issued to Farmer & Channing, (since extended and reissued,) which were afterwards sold to Gamewell & Co., of New York. The firm of Gamewell & Co. at that time consisted, I believe, of J. N. Gamewell, the senior member; Mr. Kennard, now the Superintendent of the Boston Fire Alarm Telegraph; Mr. Mendel, of Boston, and Mr. Gardiner, a member of the present Gamewell firm.

Some time in 1864, C. Robinson patented electro-magnetic mechanism for ringing fire alarm bells, and from that time to the present the records of the Patent Office show twenty-two patents for improvements in the mechanical devices for making and distributing fire alarms, nearly all of which seem, either by right of invention or purchase, to have become the property of Gamewell & Co. Recently, however, other parties have invented fire alarm apparatus, which has been introduced into five towns and cities in Ohio, Indiana and Michigan. One of the new companies—the National Fire Alarm Telegraph Company, of Richmond, Indiana—has more recently secured contracts for the construction of their system in Sacramento and San Jose, California.

The parties making bids for the construction of Fire Alarm Telegraph in Baltimore claim that their systems have been introduced as follows, viz: Gamewell & Co.—Albany, N. Y.; Alleghany, Penn.; Buffalo, N. Y.; Baltimore, Md.; Chicago, Ill.; Cincinnati, O.; Columbus, O.; Cambridge, Mass.; Charlestown, Mass.; Chelsea, Mass.; Covington, Ky.; Detroit, Mich.; Dayton, O.; Elizabeth, N. J.; Fall River, Mass.; Fitchburg, Mass.; Fond du Lac, Wis.; Harrisburg, Penn.; Hartford, Conn.; Halifax, N. S.; Hyde Park, Ill.; Indianapolis, Ind.; Jersey City, N. J.; Kalamazo, Mich.; Lansingburg, N. Y.; Louisville, Ky.; Lowell, Mass.; Lawrence, Mass.; Lynn, Mass.; Manchester, N. H.; Mobile, Ala.; Montreal, Canada; Milwaukie, Wis.; Mineapolis, Minn.; New York City; New Orleans, La.; New Bedford, Mass.; New Haven, Conn.; Newark, N. J.; Nashville, Tenn.; Newton, Mass.; Newport, Ky.;

Newport, R. I.; Omaha, Neb.; Philadelphia, Penn.; Pittsburg, Penn.; Portland, Me.; Peoria, Ill.; Providence, R. I.; Portland, Oregon; Patterson, N. J.; Pawtucket, R. I.; Quebec, Ont.; Reading, Pa.; Rochester, N. Y.; Richmond, Va.; St. Louis, Mo.; St. John, N. B.; St. Paul, Minn.; Springfield, Ill.; San Francisco, Cal.; Savannah, Ga.; Syracuse, N. Y.; Somerville, Mass.; Terre Haute, Ind.; Troy, N. Y.; Taunton, Mass.; Toledo, O.; Toronto, Canada; West Roxburg, Mass.; Washington, D. C.; Worcester, Mass.; Norwich, Conn.; Galveston, Texas; Springfield, O.; Charleston, S. C.

The National Telegraph Company—Hamilton, O.; Richmond, Ind., and Fort Wayne, Ind.

The Michigan Company, of Jackson, Mich.—At Grand Rapids, Mich., and Bay City, Mich.

The Domestic Telegraph Company, of New York, have never as yet constructed Fire Alarm Telegraph, but propose to use the same system as that now used by them to summon messenger boys in the City of New York, with some modifications and additions.

Stephen Chester proposes to supply the City of Baltimore with all the apparatus called for in specifications, and considerably more, and has furnished me, from time to time, drawings of different apparatus which he proposes furnishing. Mr. Chester's telegraph is nowhere in actual operation.

I now come to the apparatus, or designs for apparatus offered by the different parties making bids. Without the means of illustration I cannot undertake fully to explain their merits or demerits, but will endeavor to give you some of the most important features, in a manner that will be readily comprehended.

The National Company offers a system for which they claim the following advantages, viz: Simplicity of construction, and consequently less liability to get out of order; economy of maintenance, because, no repeaters being used, less skilled persons will be required to keep it in order, and finally, to use their own language, "Our system, operating directly from the signal-boxes to the gongs in the engine houses, prevents any delays in the re-transmission of signals through repeaters, or the possibility of no signal in case the repeater at central office should fail to work." The system comprises a continuous or duplicated open circuit, upon which are the signal-boxes and engine house and other machinery for alarms. They have no "central office," or automatic repeating apparatus, although, in spite of their disclaimer in the explanation of their system, of the utility of such apparatus, their electrician, Mr. McCullough, has now in course of construction an automatic switch, which it is proposed to offer to the City of Baltimore as a substitute or equivalent for a repeating apparatus. This experiment, even if performing successfully the functions assigned to it, can in no way be considered an *equivalent* for an automatic or central office repeater.

The signal-box shows considerable ingenuity in its design and construction. It, however, developes a weakness in the beginning, as it makes its electrical connections through a rolling instead of a rubbing contact, the inferiority of which consists in the fact that the rubbing contact, by the nature of its action, keeps its pathway clean, while the rolling contact is particularly unsafe in mechanism, more or less exposed to dust or oxydization. This system, while using the inevitable break-wheel, throws its boxes and machinery into circuit by the use of a ground or earth contact, made by a ground wire connecting with the axle of a small metal wheel, revolving in contact with the break-wheel. Here is an essential weakness in a most important point. A bad "earth," as it is technically called, caused by the breaking of the ground wire, dry or frozen earth, or peculiar geological formations, familiar to telegraphic engineers, would render the particular box at which such fault existed entirely useless, and there would be no way of detecting such, unless by sending in an alarm, which in case of a fire, might prove a costly "test." Again, it is well known that "escapes" or "grounds" are a much greater source of trouble in working wires generally than breakage or other causes. Now if a ground or heavy escape should come upon the wires of this system, it would not only cut off all distant communications, but would render really useless, by permanently closing the circuit, the home end of the wire. There is no way by which either such an escape, or a clean break of the wire, could be discovered, excepting by an actual manual test. Where certainty, promptness and reliability of action are required, the closed circuit must always be used. A closed circuit line may be properly termed a "live" line, because if accidentally opened, grounded, or otherwise interrupted, it will speak for itself, calling attention to its disabled condition, and need of repairs. An open circuit, on the contrary, is normally dead, and cannot be summoned into life without the use of certain appliances for passing the electrical current over it. The good points of a closed circuit are thus positively good, while the *best* points in the open circuit are only negatively so.

The device for setting the mechanism of the alarm box in motion is objectionable. It is a sort of "push-pin" arrangement at the top of the box, and is not readily discoverable, a defect which might occasion delay in sending an alarm by one not familiar with the box. The absence of a bell and key are also grave defects. There are many occasions when it is necessary, for the efficient handling of the Fire Department, to have communications with different engine houses by signals that cannot be had by merely pulling the box.

The alarm apparatus of this company, to be successfully worked, will require heavy battery power as well as mechanical force. The gongs are struck by the direct downward stroke of a rod or plunger, which gives a blow far inferior to the swinging lateral blow delivered by the strikers of several other inventions. Having never tested their bell-striking machines upon large bells, I am not prepared to express an opinion as to their merits.

Referring again to the language of the proposals, where it is stated as one of the advantages of their system that "Doing away with the repeaters, a very delicate and expensive instrument, less skilled operators are required to keep the apparatus in perfect and safe working order," I would state that we have alarms of fire from other sources besides the signal-boxes, and must have some method of sending them out. We have made arrangements with the American District Telegraph Company to utilize their private fire telegraph, and doubtless there will be other private telegraphic schemes established, whose services will be readily accepted by this department. For this reason, if for no other, I think it is essential that we should have the apparatus necessary for repeating alarms from one circuit to another, and for sending out such alarms as may be sent to the central office. Finally, I would say that no matter what system of telegraph the City of Baltimore may see fit to adopt, when its large extent of territory is considered, and the amount of property (to say nothing of human life) depending for safety from the ravages of fire upon that system, I consider that any proposition looking to the employment of unskilled persons to guard such interests, is a false measure of economy, likely to lead to results directly the reverse of economical.

The amount for which this company propose to construct their system is $51,750.

The Michigan Fire Alarm Telegraph Company offer to construct their system for $53,890.

As stated before in this report, their system is working in Bay City and Grand Rapids, Mich.; but the system as there applied could in no way serve the purposes of so large a city as Baltimore. Their boxes contain the break-wheel in a modified form, an endless chain passing over it with projecting points to make and break the circuit. One good feature in the box is the point of contact, which is wedge-shaped, striking into a V formed platina spring, thus making a solid metal contact. It has a non-interfering device, comprising a small time-train movement, which picks up a lever on the first motion of the armature in every box, and holds for a set time, during which the hooks of the boxes, if pulled, would have no effect on the signal machinery. The inner cases of the boxes are made of wood, soaked in parafine grease, to protect the clock-work from dampness, and for insulating purposes. This company has no central office repeater as yet constructed, but I have received a diagram of an experimental repeater, which they contemplate including in their system.

The Domestic Fire Alarm Telegraph Company, of New York, offer for sale to the City of Baltimore machinery and batteries for a system of Fire Alarm Telegraph for $17,500, but do not propose either to construct the lines or place the machinery in position.

Their apparatus consists of one hundred and fifty automatic signal-boxes, twenty-four electro-mechanical gong-strikers, sixty-five electric bells, keys and lightning arresters, five self starting recorders and relays, two repeaters, one switch-board, two testing galvanometers, one hundred and fifty small electric bells for boxes, with keys and lightning arresters, and sufficient battery to work the system. The boxes work on open circuit, and are open to all the objections heretofore alluded to in the National Company's system. They have a central office repeating apparatus. The alarm—if a noiseless record on paper can be called an alarm—is made by the passage of the electric current through strips of paper chemically prepared. This is done very quickly, the signal being made and recorded in two or three seconds, in colored dots upon the paper. The repeater consists of a cylinder, carrying as many break-wheels as there are signal-boxes. Each break-wheel has a number of cogs and interdental spaces, corresponding to the number of the box it represents; and on each of them is placed a spring, connected with the alarm wires. When the train of clock-work which carries the cylinder is set in motion, the alarm is sent out to all the engine houses, &c.

The objections to this system, besides the primary one of its being an open circuit system, are these: The incoming signal, while it leaves a temporary record on the paper band, gives no audible alarm. The record is evanescent—the characters fading away entirely within a few moments, and if the paper be not kept constantly moistened with the chemical preparation, no record, whatever, is made. This, while being no serious objection, if the paper were in constant use, is one which renders it almost worthless for Fire Alarm Telegraphy, where the recorder is sometimes not started for several days. No automatic repeater is offered with the central office apparatus, entire dependence being placed in the cylinder repeater before described. Again, the whole system is entirely experimental, having heretofore been used only for summoning messenger boys from central office in the city of New York to private houses. They have exhibited, however, a working model of a repeater, from which it is proposed to construct something to meet our demands.

Mr. Stephen Chester of New York makes a proposal to construct the Police and Fire Alarm Telegraph for the city, in accordance with specifications, and in addition "to furnish in each box a device to facilitate and render possible the discovery of breaks, faults, or imperfections in lines or boxes, through the agency of the testing apparatus described in the specifications, and to locate the same with a degree of accuracy, unattainable when such device is not used." He also proposes to place in each engine house Pierce and Griswold's Annunciators, also fifteen miles more of wire if necessary, also galvanometers permanently organized to show strength and condition of batteries at all times, also two annunciators in the central office to indicate in-coming and out-going signals, also a standard clock or time piece with electro-magnetic attachment, upon which will be recorded the exact time at which any signal is received and sent out, also a supplemental repeater for great bell lines or other purposes, and finally to make certain improvements in the striking machinery of "Big Sam," according to a working model exhibited to me. The amount for which he proposes to do the work is fifty-four thousand dollars.

The distinctive feature of the signal-box of the Chester system is the non-interference device, which is intended to prevent confusion in case of two alarms of fire occuring within the limits of one circuit, necessitating the pulling of two boxes simultaneously. The device is as follows: There are two key-holes in the outer door of the signal-box—a small one near the edge of the door for unlocking it, and a larger one near the centre of the door. A peculiarily shaped key is inserted in this key-hole and turned completely around, by which the weight running the clock-work is raised, a spring then forces the key out of the hole and a metalic plate drops into a prepared shoulder, covering the key-hole. No further access to that box can be had until the shield is removed, which is done after the alarm is finished, by throwing over the wire a powerful current from additional batteries at the central office. When any box commences running, the shield of every box in the system drops down and so remains until removed as above described. These boxes are nowhere in actual use, and I should be loth to recommend, without such practical test, anything upon which so much depends. If the current should fail to lift the shield on any box it would be rendered useless for further alarms until the fact had been discovered and remedied, and it could not be discovered except by ocular examination. I do not approve of the device. The automatic repeater comprises a weight-driven train of wheels, controlled by a magnet, which requires the opening and closing of the circuit before it starts the train. This magnet is opened or closed by any of the relay magnets connected with the signal-box lines, so that if a signal-box be started, the relay on that circuit, by opening and closing, communicates the alarm through the mechanism of the repeater to the alarm circuit. An attachment is made to this by means of a punched paper slip, by which a slower alarm is at the same time sent out to large bells. There are many weak points in this repeater not necessary to mention. One grave defect, however, is that the breaking or other accidental interruption of any of the lines would entirely disable the instrument for sending out alarms. Another is that the non-interference feature being confined entirely to the box, the repeater would be left entirely to the mercy of any alarm that might be communicated.

The central office repeater which Mr. Chester proposes to furnish has never been constructed, but he has furnished me with drawings of one contemplated, described as follows: In a box are three disclosures in horazontal line for units, tens and hundreds. Brass plates slide perpendicularly behind these holes, having upon them numbers from 0 to 9. The movement of these bars to express any number, carries a corresponding change in the internal connections so as to cause a corresponding number of breaks; therefore, the number disclosed when the machine is set in motion will be struck out. The alarms for the great bells are struck by the supplemental repeater.

Mr. Chester also proposes to arrange the automatic and central office repeaters so that three distinct and separate combinations can be made, viz: 1st. The signals from boxes to go out instantly through automatic repeaters, to the gong alarms and signal lines rapidly, and to the great bells more slowly. 2d. The signals from boxes are received on call-bells and registers at central office and struck by the three disclosure repeater through the automatic, slow and fast as above described. 3d. The automatic repeater is disconnected entirely from the combination, and the alarms are sent out by the three disclosure repeater directly to the engine houses; the large bells, in this case, being struck by means of the supplemental repeater.

This "three disclosure" repeater, being similar in many respects to the three dial repeater in use in Boston and Buffalo, is, in my opinion, the most reliable piece of machinery offered, and presents some most excellent features. As it has never been constructed however, even in a working model, it cannot be called anything more than an experiment. In fact, the whole system offered by Mr. Chester is entirely experimental, and for this reason I think would not be approved by any member of your Commission.

Gamewell & Co. offer proposals to construct the Police and Fire Alarm Telegraph for $55,000 as per specifications, and are the only bidders who have presented for examination all the apparatus complete as designed to be furnished should their proposal be accepted.

Their signal-boxes, termed automatic non-interfering, are built in the best manner, with all the finer parts thoroughly protected from dust and damp by air-tight cases. The alarm is given by a break-wheel, revolving under platina springs, making a rubbing contact. The mechanism is easily set in motion, and once started cannot be interfered with either through stupidity or design. The boxes contain bell magnets and signal keys, and the outer door is fastened with a trap-lock. Keys once placed in the locks cannot be removed except by master keys, which are placed only in the hands of authorized persons. Every signal-box key is numbered, and the name of the person to whom entrusted is recorded—to insure against false alarms. The gong and bell strikers are powerful, yet require but small battery power to control them. The central office machinery is elaborate and complete in all its parts. The automatic repeaters are so arranged as to receive all alarms from signal-boxes and to re-transmit them over the alarm circuits without intervention on the part of the operator. They are also non-interfering—the circuit from which the alarm comes controlling the whole mechanism of the instrument, and all others being locked out at the first stroke.

The central office repeater, which is intended to be used for sending out such alarms as may be sent to the office from other sources than the signal-boxes, is a three dial instrument arranged for any desired combination, and working at a speed which may be varied at will. It is easily adjusted and set in motion, and when started completes its work without further aid from the operator. All the apparatus of Gamewell & Co. has been tested by actual service, and its value and efficiency well proved.

The proposals of Brown & Rogers, numbered one and two, and that of Watts & Co., are for the construction of the lines alone. The proposal of Brown & Rogers, numbered three, is for the construction of the lines and furnishing a portion of the Domestic Company's machinery.

Referring again to the proposal to construct the lines alone, I beg to state that I can see no advantage to be derived from dividing the work; on the contrary, I am decidedly of the opinion that there should be no divided responsibility in the matter, as in the event of any trouble occurring in the working of the telegraph, each party would charge the other with the fault, and both might escape, leaving the Superintendent of Telegraph who recommended the system to bear the blame. I am, therefore, in favor of placing the entire work in the hands of one party, and holding him strictly responsible for the perfection of the system.

An examination of the proposals shows no great difference in price for the various systems offered. The National Company's bid is $51,750; the Michigan $53,895; the Domestic, for machinery alone, $17,500; Stephen Chester, $55,000; and Gamewell & Co. $55,000, but neither the National, Michigan nor Domestic, offer to furnish such central office machinery as experience in Fire Telegraphy has proven to be essential to a perfect system. In the systems of the last named three companies, the entire apparatus is placed upon a single wire line, and where but a limited amount of apparatus is required, this may answer, but in a large city like Baltimore it is of the utmost importance that the apparatus should be placed upon many circuits so that no considerable portion of the city may be left dependent upon a single line.

I believe I fully appreciate the importance of a wise decision in awarding the contract for the construction of the Fire Telegraph. The requirements of a complete and perfect system are many, and the experience of over twenty years has indicated what those requirements are. There is no need to grope in the dark. Many competitive examinations of fire alarm apparatus have been made by the most skilled electricians and leading experts of the country ; and such examinations I find have invariably resulted in awarding to Gamewell & Co. the palm of merit for their apparatus. Their system has been endorsed by Prof. Page, Prof. Rogers, Prof. Barker, Prof. Henry, Dr. Curren, Frank L. Pope, Esq., Capt. Howgate of the U. S. Signal Bureau, Gen. Stager and Gen. Lefferts of the W. U. Telegraph Company, and many others. F. L. Pope, who stands among the foremost electricians of this country, and is a member of the London Society of Telegraph Engineers, gives the following testimony:

"I, Frank L. Pope, being duly sworn, depose and say that I am an electrical engineer, and have been such for fifteen years last past, and that I am the author of a work on telegraphy entitled 'Modern Practice of the Electric Telegraph.' I am at present engaged in the principal office of the W. U. Telegraph Co., in the city of New York, as electrical expert and adviser, and am also engineer of the Electric Railroad Signal Company of N. Y. I consider myself perfectly familiar with fire alarm telegraphy in all its workings, requirements and details.

"I have examined and am familiar with the Fire Alarm Telegraph now in use in New York and other cities, which have been erected in accordance with letters patent owned by Gamewell & Co., of New York, and known as the 'American Fire Alarm Telegraph,' and also as the 'Gamewell System.' The patents granted many years ago to Channing & Farmer lie at the foundation of this system, but since the date of the original invention a great number of important details and improvements have been brought out by others from time to time, the patents for which have been acquired by Gamewell & Co., and the inventions embraced in them incorporated into the general system, thereby increasing its effectiveness and practical value to a point which leaves scarcely anything to be desired. Taking into consideration not only the great number of conditions which must be fulfilled in order to render the system of practical value, and their peculiarly difficult character, and having an intimate knowledge of the whole history of the electrical and telegraphic invention, both in this country and abroad, I have no hesitation in saying that I consider the American Fire Alarm Telegraph, as now perfected, as the most ingenious, effective and perfectly successful adaptation of the principles of electro-magnetic telegraphy which has ever been made in any country, or for any purpose whatever.

" The following are some of the essential requirements of a Fire-Alarm Telegraph System :

" 1. The signalizing stations must be distributed throughout the territory to be protected, and so arranged as to be quickly accessible to any proper person desiring to give an alarm.

" 2. The signaling apparatus must be capable of transmitting an instantaneous, definite and undeniable alarm, without the possibility of error or derangement, however unintelligent or excitable the signalizer may be.

" 3. The alarm must be transmitted instantly and simultaneously to as many different points as circumstances may render necessary, without the possibility of this transmission being interfered with by the operations of other signalizers, or by ordinary accident to the conducting wires.

" 4. It being required in most cases that the alarm should be given instantly to as large a number of people as possible, as well as to the officers of the Fire Department, it is essential that apparatus should be provided for striking the largest tower bells, as well as engine house gongs or ordinary signal bells, and this should be done by means of a moderate, constant and inexpensive battery power.

"5. The battery for operating the entire system should all be situated at one convenient point, where its working condition can be readily observed, and its wants reasonably attended to.

"6. In case of the interruption or breakage of the wires, or failure of the battery, the apparatus should be arranged so as to instantly give a special alarm which cannot be mistaken for a fire signal, but will serve to call the attention of the proper official so that the difficulty may be removed.

"I have no knowledge of any system that, in my judgment, fulfils these varied requirements with anything like the completeness and perfection of the American Fire Alarm Telegraph.

"Frank L. Pope."

Subscribed and sworn to before me this 26th day of July, 1875.

B. S. Clark,

Notary Public, N. Y. City and County.

I think we can make no mistake in following a path so clearly shown and proven by others to be one of absolute safety; I would therefore unhesitatingly recommend that a contract be made with Gamewell & Co., of New York, in accordance with the plans and specifications already submitted, and present in conclusion, a brief summary of my reasons for so recommending.

Gamewell & Co. are the only parties who have made the business of constructing and selling Fire Alarm Telegraphs a specialty for many years.

They are the only parties thoroughly endorsed by competent judges as possessing complete and perfect apparatus.

They are the only parties who have placed before us, or who have in actual service, the identical apparatus they propose to furnish to the City of Baltimore, tested by actual use and found perfect and satisfactory in all details.

They are the only parties whose history as relates to the manufacture of Fire Alarm Telegraph machinery, is identified with the history of the Telegraph itself, and finally, they are the only parties about whose patent rights there is no question or contest.

I am, gentlemen,
Yours very respectfully,
J. F. Morrison,
Sup't Police and Fire Telegraph.

The contract was then awarded to Gamewell & Co., of New York, under the firm name of Gamewell, Gardiner, Burns and Gamewell, and executed on the third day of January, 1877, stipulating that the system therein agreed upon should be completed and ready for service within six calendar months from the date of agreement.

On the 30th of June—no steps of any consequence having been taken by Gamewell & Co. to build the telegraph, and the time specified in the agreement having nearly expired — I wrote them asking if they would complete the telegraph if their time was extended. To this I received the following reply:

J. F. Morrison, Superintendent
Fire Telegraph, Baltimore, Md.

Sir:—In reply to your favor of 30th ulto., asking if we would complete our contract by the time specified, we are pained to say that we find ourselves unable to fulfil the said contract, and have no reason to believe that we could do so even were an extension of time granted to us.

Very respectfully,

New York, July 3d, 1877. GAMEWELL & Co.

Within a few days after the receipt of Gamewell & Co's communication, I received the following letter:

OFFICE OF THE GAMEWELL FIRE ALARM TELEGRAPH Co.
Room 28, No. 21 Park Row.

NEW YORK, July 6, 1877.

J. F. Morrison, Superintendent
Fire Alarm Telegraph, Baltimore, Md.

SIR:—This Company having become the owners by assignment from Gamewell & Co, of this city, of the several letters patent under which they have been heretofore engaged in erecting Fire Alarm and Police Telegraphs in the United States, and understanding that the contract made between Gamewell & Co. and your city, under date of January 3d, 1877, has expired by its own limitation, begs respectfully to submit to your city the following proposition:

That it will erect and put in operation in your city a Fire Alarm and Police Telegraph in accordance with the specifications contained in the draft of contract which will be forwarded to you by to-morrow's mail.

You will observe that we are prepared to complete the said telegraph, and have the same in operation within sixty days from the date of contract.

Very respectfully, &c.,

L. G. TILLOTTSON, *President.*
By ARDIN S. FITCH, *Secretary.*

All of these communications, together with other documents establishing the legality of the corporation offering to build telegraphs under the name of the Gamewell Fire Alarm Telegraph Company, were placed by me in the hands of the Mayor, Comptroller and Register, who after submitting them to the scrutiny of the law officers of the city, instructed me to make a contract with the new company. This I did upon the basis of the specifications contained in the original contract with Gamewell & Co.

This contract which was dated on July fourteenth, was formally ratified and approved by the Mayor, Comptroller and Register on the twenty-fifth day of the same month. The work was pushed forward as rapidly as possible, but it was not until the sixteenth of November that I was notified by the Superintendent of the Company of its completion.

By direction of His Honor the Mayor I then made a final inspection and working test of the system—found it perfect in all its details, and according to the specifications under which the contract was made, I so reported to the Mayor, and recommended its immediate acceptance by the City. The Mayor, Comptroller and Register then appointed a committee of experts composed of Robert Stewart, Esq., Superintendent of Baltimore and Ohio Railway Telegraph, and Archibald Wilson, Jr., Esq., Manager of the Western Union Telegraph Company of this City, to again inspect the work. A thorough inspection of the whole work, including the lines, machinery, batteries and all engine house, police station and other apparatus and appurtenances, was made by these gentlemen in company with the Comptroller, Register and City Council Committees on Fire Department, after which they submitted the following report:

BALTIMORE, MD., November 29th, 1877.

Honorable George P. Kane,

Mayor of Baltimore.

SIR:—Agreeably to your request we have made an inspection and examination of the new Police and Fire Alarm Telegraph erected in the City of Baltimore, under a contract with the Gamewell Fire Alarm Company, and beg respectfully to submit the following report:

We have examined the contract between the Gamewell Fire Alarm Telegraph Company and the City of Baltimore in all its details, and after a close inspection of the finished work, have found it well and thoroughly done in accordance with its specifications and agreements. We would especially mention the close adherence to the contract in details, which are frequently omitted or carelessly passed over in such construction. The battery-room is one of the most perfect in the country, particular attention having been paid to insulation, as well as to neatness and utility in its construction and equipment. The machinery, comprising switches, call-bells, repeaters, annunciators, galvanometers and many other important features, which were manufactured by Moses G. Crane, of Boston, Mass., and the registers by the Messrs. Watts & Co., of Baltimore, and are models of perfect workmanship, were placed in position in the respective offices under the personal supervision of J. N. Gamewell, assisted by Messrs. Rogers and Gardiner, and thoroughly tested and found to be in good and perfect running order. The building of the lines, including the furnishing and setting of the poles, stringing of wire, and other details connected therewith, was performed by Messrs. Watts & Co., of Baltimore, under the direct supervision of Superintendent Morrison, and insures a reliable and durable line of telegraph for the purposes required. The wires were placed on poles, except in some instances, where the topography of the city rendered it absolutely necessary to use house-tops. Without specifying further in detail the work which it has been our province to inspect, we desire unqualifiedly to state that in our opinion the City of Baltimore is in possession of the most perfect system of Fire Alarm Telegraph now in operation, and for infinitely less money than has been expended elsewhere.

We desire also to testify to the self-evident fact that the successful completion of this perfect and valuable work is due in a great measure to the personal attention and skill as a telegraphic engineer of the Superintendent, J. F. Morrison. During our telegraphic experience, we have been familiar with various plans for securing reliable and effective telegraphic signaling, and we concur in the opinion that the present system constructed under the Gamewell patents is of peculiar value for fire and police purposes, and such is the general opinion of all experts in this branch of the service.

In conclusion we congratulate the citizens of Baltimore on the added security which is given them by this most valuable and indispensable adjunct to our present excellent Police and Fire Departments.

Signed,

ROBERT STEWART,
Sup't Telegraph Balto. & Ohio R. R. Co.

ARCHIBALD WILSON, JR.,
Manager W. U. Telegraph Co.

This report was made on the twenty-ninth day of November, and the telegraph formally accepted and paid for by the proper city officers.

As this report is a matter of record so far as relates to one of the most important departments of the municipal government—the Fire Department—I beg respectfully to submit, as briefly as possible, a condensed description of the Fire Alarm lines and apparatus as they exist to-day.

The wires are of galvanized iron, No. 9, Stubb's English gauge, every joint of which is thoroughly made and soldered, and comprise an aggregate length of one hundred and sixty-nine miles. This of course applies only to outside line wires. The wire used in engine houses, police stations, department officers' dwellings and elsewhere is No. 14 copper, thoroughly insulated, or kerite covered compound wire, and is not reckoned in the aggregate. The outside lines are placed upon glass insulators, screwed on locust pins, which are set in cross-arms of squared timber, three by four inches, and of various lengths suitable for the varying number of wires which they carry in different localities. These cross-arms are securely bolted to posts of locust timber ranging from thirty to seventy-five feet in length, as the topography of the city requires. The total number of poles, exclusive of guy poles, is fourteen hundred and eighteen.

The whole system is divided up into twenty-eight circuits or metallic loops, which leave the City Hall in one direction and return by another, so that in no instance do both sides of the same loop run upon the same poles. Two entire circuits, Nos. 1 and 2, run upon trestles placed upon house-tops, as do portions of one or two other circuits, where from the presence of trees or the peculiar condition of the streets it was found impossible to set poles. These wires connect one hundred and fifty of the Gamewell Automatic Fire Alarm boxes, latest style, with the central office at the City Hall, and are so arranged that alternate boxes are upon different circuits, so that if a box fails to respond by reason of its wire being down, or for other cause, the next neighboring box is ready to give the alarm.

The battery rooms are fitted up in the basement with all the appliances which experience could suggest. Heavily framed stands coated with asphalt and raised three inches from the floor upon glass feet, carry the batteries, which comprise a total of ten hundred and eighteen cells. The floors of the battery rooms are of North Carolina pine, heavily painted with asphalt. Lead lined sinks, supplied with hot and cold water, are placed in the outer room for the purpose of washing the batteries when taken down to be cleaned.

The central office is immediately over the outer battery room, and is fitted up with walnut and black marble counters, running around the four sides of the room, upon which the apparatus is placed.

This apparatus consists of a switch-board composed of a black Belgian marble slab set in a handsomely ornamented frame of black walnut. Along the top of the slab are twenty annunciators corresponding with the twenty signal circuits, and upon the first stroke of an alarm the number of the circuit upon which the box is located which is sending in the alarm drops into place and is shown. At the base of the switch-board are placed twenty-eight small galvanometers organized in the circuits, which show either the slightest variation of battery power, or any trouble upon the lines arising from breaks, crosses, or ground contacts. Upon the counter on the west side of the room are the magnets, twenty-five in number, handsomely enclosed in plate glass and nickel cases. Immediately in front of the cases are Morse keys, connected in the various circuits for testing and other purposes. Directly over the cases and running around the west and north sides of the room is a narrow black marble shelf supporting the call-bells, upon which alarms and special calls are received. These bells are nickel plated and set upon rosewood bases, and are twenty-six in number. Morse embossing registers, of which there are five cases containing five registers each, to record in-coming and out-going alarms, occupy the counter on the north side. These are also encased in plate glass, with nickel work frames. Upon the long counter, on the east side, running nearly the entire length of the room, are placed the repeaters and police dials.

The repeaters comprise two of Gamewell's automatic and one central office or " Three Dial " repeater.

The automatic repeaters are instruments for striking out alarms automatically directly from the street boxes. When the mechanism of any one of the street boxes has been set in motion by pulling down the lever, which is seen immediately upon opening the box, the bell within the box strikes the alarm number of the box. The strokes are made by the alternate opening and closing of the circuit as the small fingers of the straight springs connected with the line press upon the teeth or drop into the interdental spaces of the break-wheel inside the inner case. Each make and break of the circuit thus described is communicated through the switch-board to the automatic repeaters, and by them transmitted to all the engine houses, police stations and other points desired to be reached, in the integral part of a second. It does yet more, it sends the alarm back upon all the box circuits, and thus throwing the non-interference features of each box into play, provides positively against interruption from any other box which might be started in the meantime.

The " Three Dial " or central office repeater is used for sending out alarms when the automatic repeaters are switched out of circuit. As its name implies, its main apparent features are three dials similar to those of clocks, upon which are inscribed numbers from one to twelve. There are also two hands like those of a clock. When sending out an alarm by means of this instrument the operator has only to set the short hand of the left hand dial at the unit of the number, that of the second at the tens, and that of the third or right-hand dial at the hundreds, press back a small lever at the base of the left-hand dial, which releases the moter weights and springs, and the alarm is struck out one, two or five times as the operator may desire, without further intervention on his part.

The engine houses and police stations are supplied with electro-mechanical gongs, the former eighteen and the latter nine inches in diameter. The engine houses are also supplied with small four inch call-bells with key attachments for special calls. Call-bells of a similar kind, except that they have no keys, are placed in the sleeping rooms of all the department officers. By an attachment at the central office all alarms of fire are sent through the circuits carrying these call-bells.

The following alarms of fire were sent over the lines of the Police and Fire Alarm Telegraph during the last past fiscal year, and the succeeding two months before the commencement of the new fiscal year:

November, 1876, seven alarms; December, sixteen alarms; January, 1877, twenty-five alarms; February, fourteen; March, twenty-four; April, fifteen; May, twenty; June, eight; July, eighteen; August, twelve; September, fourteen; October, ten; November, twelve, and December, twelve; making a total of two hundred and eleven alarms.

The poles and wires of the old telegraph still remain standing, except where they occupied the same streets with the new system, in all of which cases I cut them down. I consider them in the same class with other old material belonging to the Fire Department, to be disposed of as your Hon. Board may judge best.

During the past fiscal year the maximum of good service was reached with the old telegraph system, not a single false alarm was sent over the wires, (if we except one by the American District Telegraph Company ;) and in spite of their dilapidated condition, no serious delays occurred in sending alarms to the Fire Department. This of course was due to the constant care and watchfulness of the employees of the Police and Fire Alarm Telegraph, aided by the officers of the Police force. Too much commendation cannot be given the latter for the carefulness of their watch for and prompt report of any troubles occuring to the lines and machinery of the Telegraph. Hardly a day passed but that some fault was discovered and promptly reported by the Police, and of course promptly corrected by the Telegraph employees.

Arrangements were made with the American District Telegraph Company on the 24th of December, 1876, to utilize their fire service. Since that time we have had from them eighteen alarms of fire, only one of which was false. Immediately after this false alarm was sent in, Superintendent McCulloh, of that Company, adopted such effectual measures that no more false alarms have been received over their wires.

This is a good record, and I consider their service of considerable value as an adjunct to the Fire Telegraph.

Frequent applications have been made to me by members of the city press to adopt some method by which such news as the Police Department might consider proper for publication should be telegraphed from the different police stations to some central point accessible to the reporters and other attaches of the press.

In this connection I beg to refer your Honorable Board to page 16 of my last annual report, in which occurs the following suggestion:

"The Police Telegraph is operated at the station houses by officers of the Police Department, whose duties are prescribed by the Marshal of Police by direction of the Police Commissioners. The only feasible plan suggested to my mind, therefore, is to make an arrangement whereby the Police Department would instruct its proper officers to forward from each station house by telegraph to the central office, or to the office of the Marshal of Police, such station house records as are permitted to be published in the newspapers. These reports to be accurately transcribed in a book kept for that purpose, to which members of the press might have free access. I have no doubt that a suggestion from His Honor the Mayor, looking to this result, would receive courteous consideration from the Board of Police Commissioners."

I can only add in this connection that with the present slow cumbrous system of dial telegraphy, that this would entail a considerable amount of extra labor upon the Police Department, and could only be made easily available by the substitution of the Morse system throughout the Police Department, which, however, could be done at a very small expense. Inquiries have been made by the police officials as to the feasibility of introducing telephones as a means of communication between the station houses and police headquarters.

I beg respectfully to state, the introduction of the speaking telephone for the purposes named is entirely feasible, and would open up a simple, prompt and easy method of communication between the points named. The introduction of the telephone has been so decided a success, and its use among business men is becoming so universal, that its success as a means of communication between points not too distant, is no longer problematical.

The Marine Hospital telegraph, owing to changes in the grades of the streets south of the railway terminus on Light street, and the inferior quality of the poles used from the bridge to the Hospital, necessitates the entire reconstruction from the point first named. This would cost about four hundred dollars.

In addition to the new Police and Fire Alarm Telegraph and the Marine Hospital line, we have now in charge of this Department a line of telegraph for the Water Department, connecting their stations and offices from Lake Roland to their new building on North street. This line is about seventeen miles long, and carries eight dial instruments. The line was constructed at a very small cost, and now that the employees of the Water Department have become proficient in the use of the instruments, it is accepted as a very valuable method of communication by the officers of that Department.

During the month of December, 1877, I constructed two loops, connecting respectively the bells of No. 1 Engine house on Paca street, and No. 3 Engine house on Lombard street, with the apparatus at the City Hall.

During the riots last summer I built wires connecting police headquarters with the two great railways, and also run in a connection with the United States Signal wire, which upon an emergency could be used at the City Hall to communicate with the War Department at Washington.

All of which is respectfully submitted.

J. F. Morrison,
Superintendent of Telegraph.

DO NOT CIRCULATE

ANNUAL REPORT

OF THE

Fire Commissioners,

TO THE

MAYOR AND CITY COUNCIL

OF BALTIMORE,

FOR THE

YEAR ENDING DECEMBER 31, 1878.

1797

BALTIMORE:
Printed by John Cox, City Printer,
Cor. Pratt St. & Spear's Wharf.

1879.

Baltimore. Board of fire commissioners.

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REPORT.

OFFICE BOARD OF FIRE COMMISSIONERS,

Baltimore, January 1st, 1879.

To the Honorable the Mayor and City Council:

GENTLEMEN:

In pursuance of the usual custom the Board of Fire Commissioners respectfully submits to your Honorable Body the twentieth annual report of the department under their charge, for the year ending 1878.

The composition of the Board has undergone a change during the period named. Messrs. Charles B. Slingluff, Samuel Hannah and James E. Trott, have been elected Fire Commissioners, vice Messrs. John T. Morris, Hugh Gifford and James A. Bruce, retiring; by ordinance of the City Council, passed October 4th, 1878, the Board was increased to seven, and Mr. J. F. Morrison elected.

The working force of the Department remains the same as the previous year, viz: thirteen (13) engine companies, three (3) hook and ladder companies and one hundred and ninety-eight (198) men.

The apparatus of the Department consists of seventeen (17) engines, thirteen (13) in regular service and four (4) reserves, twenty-six (26) hose carriages, ten (10) steam heaters, three (3) hook and ladder trucks, one (1) reserve truck, four (4) fuel wagons, with all the necessary appurtenances to complete them for fire service during the year. No. 1 engine has had a complete set of new metal flues, a general overhauling, and the discharge screws extended so as to enable it to get into service quicker than formerly; this new arrangement also gives the force of two pumps at one time, it being a double engine. No. 2 engine has had a new pump, new connections, and a general overhauling. No. 3 engine has had new cages in pumps, &c. No. 4 engine has had a new sett of metal flues. Reserve engine "Baltimore" has had a new boiler, new connections, and other repairs. Reserve engine "John Cushing" has had a new boiler, new cylinder, new steam pipes, and other connections. Two new heaters have been built during the year; there are now in service ten (10) steam heaters in use in the following Houses: 1, 2, 3, 4, 5, 6, 9, 11 and 12. There has also been made an appliance known as the Siamese connection, by means of which two streams of water, from separate engines, become united and can be thrown to an increased height. The Board contemplates building next year, 1879, three new hose carriages, two of them being needed at present. Taking all things into consideration, in the opinion of the Board, the apparatus is at present in good condition, as by reference to the above it will be seen that a large portion of it has been thoroughly overhauled.

There is in service sixteen thousand one hundred and fifty (16,150) feet of first quality hose, and twelve thousand (12,000) feet of second quality. There was purchased during the year seven thousand (7,000) feet.

The Department has seventy-two (72) horses, sixty-six (66) in regular service, and six (6) reserves. During the year twelve new horses were purchased, some of them have been in service for some time, but still retain good activity.

In view of the considerable amount of fire service performed by the No. 2 Hook and Ladder Company, on Paca street, which service covers all that portion of the city lying west of Calvert street, also including Locust Point, the Board deemed it necessary, if possible, to relieve them of part of their labors by adding to the Department a new Hook and Ladder Company, to be located somewhere near the intersection of Pennsylvania avenue and Biddle street, and to remove the No. 2 Hook and Ladder Company from its present location, to somewhere near the intersection of Camden and Howard streets, or nearer to No. 2 Engine House on Barre street. By this change it was intended that the new Company should cover the west and north-western section, and No. 2 Hook and Ladder Company could not only be kept nearer the centre of the city. but it would shorten their run to Locust Point, where it is very essential that such a Company should be gotten as soon as possible after an alarm of fire in that locality, in view of the immense and valuable warehouse property which has been erected in that section during the past few years, and its rapidly increasing manufacturing interests. This, however, would have necessitated an expenditure of $35,000 00. Now, while the members of this Board deemed this addition to the Department as actually necessary to bring its efficiency to the proper maximum, yet, with the present demand on all sides for economical municipal expenditures, they do not at present propose to ask for an appropriation for the purpose named.

The Inspector of Public Buildings gave great care and attention to the wants of this Department, and repairs to engine houses 2, 3, 6, 7, &c., were made thorougly and promptly until his appropriation for that purpose was exhausted. The following repairs are actually necessary: No. 1 Engine Company, the stable should be extended back to Diamond street; the stables of Nos. 5, 10, 11, 12 and 13 Engine Companies require new floors; the stalls of Nos. 11, 12 and 13 need turning so as to face the apparatus; the east walls of

Nos. 10 and 12 engine houses should be cemented, as the dampness disfigures the inside of these houses; No. 12 Engine engine room needs a new floor. The repairing of the houses of this Department can be done more promptly and at a less expense to the City if the fund for that purpose is placed by the Mayor and City Council with the Board of Fire Commissioners; many repairs which are now made at a considerable cost by contract with outside parties, or where outside labor is employed, could be done with only the cost of the material used, as the work could be done by the men connected with this Department.

By reference to the following table of 1876, which is the latest complete one we have been enabled to obtain, it will be seen that the Fire Department of our city has rendered better service, at less expense, than any of the principal cities of the Union. Included in the losses for 1876 is the large fire at Brown & Bros., drug warehouse, which amounted to $225,000.

City.	Number of Members.	Department Expenses.	Amount of Losses.	No. of Engines.	No. of Hook and Ladder Companies, Chemical Engines & other appliances.
New York.....	750	$1,299,962 34	$2,472,336 00	43	27
Philadelphia..	395	477,830 00	1,353,259 00	27	5
Boston.........	368	489,652 82	541,277 00	29	27
Baltimore.. ...	199	157,976 47	563,249 00	13	3
St. Louis......	225	292,339 71	335,322 00	18	4
San Francisco	174	146,070 79	640,492 00	11	3
Cincinnati.....	154	236,800 52	440,183 00	18	6
Brooklyn... ...	198	325,611 73	909,361 00	17	5
Chicago........	344	417,937 20	277,720 00	29	13
Pittsburgh. ...	116	143,586 40	368,351 00	12	4

There were 171 box alarms and 200 silent alarms of fire, and the losses thereby amounted to $156,601 98.

The recommendation in the previous report in reference to compelling owners and managers of hotels, theatres, churches and other public places, to provide means of escape in times of fire and panic, is again recommended. This cannot be brought too often before the proper authorities. Very often after a fire has occurred in some large public building, committees are appointed to provide such means, but afterwards there is a great deal of laxity shown, and by degrees the matter dies out and nothing is heard of it again until the reoccurrence of a like calamity. There was passed, during the last session of the Council, a law compelling managers of public places to keep the aisles clear, &c., so as to afford easy egress in cases of fire or panic. This is a good law, and the Board desires respectfully to call the atttention of the parties whose duty it is to see that it is properly enforced.

Hardly a fire has occurred in this department during the past year, but what could have been better extinguished and at far less trouble and expense, if a proper system had been observed in the construction of buildings. This Board from year to year has endeavored to impress the Mayor and City Council with the importance of some legislation looking to this result, but up to this time no such legislation has been had. This Board therefore desires to urge upon the Mayor and City Council the vital importance of some legislation in this respect, as early as possible.

The appropriation for the Fire Department for the year 1878 was $175,400 00, the amount drawn from the City Register was $165,741 59, leaving an undrawn balance of $9,658 41. The amount asked for the running expenses of 1879 is $156,000 00, being $19,000 00 less than the appropriation for

1878, and nearly $10,000 00 less than the expenses of that year. There was paid to the City Register the sum of $2,163 30, which was realized from the sale of old material, &c.

The following is a list of tables showing the receipts and expenditures in detail.

Respectfully submitted,

SAMUEL W. REGESTER, *Pres't,*
F. C. LATROBE, *ex-officio,*
THOS. W. CAMPBELL,
CHAS. B. SLINGLUFF,
JAMES E. TROTT,
SAMUEL HANNAH,
J. F. MORRISON,
Board of Fire Commissioners.

Attest:

GEO. A. CAMPBELL, *Secretary.*

TABLES.

Statement of appropriations for fiscal year ending December 31st, 1878.

Amount appropriated by the City Council for 1878	$175,000 00
Special appropriation to erect fire alarm box 416	400 00
Total	$175,400 00
Amount drawn from the City Register same period	$165,741 59
Balance undrawn	$9,658 41

Receipts from all sources.

Stock in hand in Store Room, December 31st, 1877		$654 64
Received from the City Register, 1878		165,741 59
“ “ Fines		594 55
“ “ Uniforms		601 47
“ “ Sale of horses		445 00
“ “ “ Manure		215 00
“ “ “ Old hose, &c		307 28
Indemnity from Insurance Companies for members		117 84
		$168,677 37
Receipts from all sources		$168,677 37
Expenditures	$165,639 43	
Add amount paid City Register	2,163 30	
	$167,802 73	
To balance—		
Store Room stock, December 31st, 1878	874 64	
		$168,677 37

Expenditures for the year ending December 31*st*, 1878.

Salaries	$110,600	84
Apparatus	4,913	75
Apparatus repairs	5,709	93
Accidents	1,052	88
Feed	5,868	99
Fuel	1,383	58
Furniture	1,928	74
Harness and repairs	776	30
Horse shoeing	1,329	66
Hose	5,651	78
Horses	3,090	68
Ground rent	1,123	24
Gas light	822	35
Oils, grease, &c	1,261	46
Office expenses (including pay of messenger)	451	24
Water rent	336	60
Washing	1,234	76
Police and Fire Alarm Telegraph	12.749	14
No. 4 Truck	1,458	00
Uniforms	290	47
Medicine	40	45
Fire alarm box 416	326	45
Insurance premium on lives of members	2,250	00
Insurance indemnity paid members	117	84
Miscellaneous	870	30
	$165,639	43

Company expenses for the year ending December 31*st*, 1878.

Engine Company No. 1..................	$9,286 49	
“ “ “ 2..................	10,256 29	
“ “ “ 3..................	9,453 86	
“ “ “ 4..................	10,023 96	
“ “ “ 5..................	8,156 36	
“ “ “ 6................	10,110 23	
“ “ “ 7..................	8,679 34	
“ “ “ 8..................	8,660 23	
“ “ “ 9..................	8,954 35	
“ “ “ 10..................	8,219 24	
“ “ “ 11	8,067 26	
“ “ “ 12..................	8,904 46	
“ “ “ 13..................	7,798 13	
Hook and Ladder Company No. 1...	7,595 02	
“ “ “ “ “ 2...	8,216 40	
“ “ “ “ “ 3...	7,563 43	
Reserves..................................	2,791 12	
		$142,736 17
Office expenses...........................		451 24
Miscellaneous......		870 30
Police and Fire Alarm Telegraph..................		12,749 14
No. 4 Truck......................		1,458 00
Uniforms..		290 47
No. 416 Box..........		326 45
Officers' salaries, &c..................................		6,639 82
Accident Insurance indemnity......................		117 84
		$165,639 43

The estimated amount of appropriation for the Baltimore City Fire Department, for the fiscal year 1879, *is as follows:*

Salaries		$110,600 00
Apparatus		2,100 00
Apparatus repairs		7,000 00
Accident		1,800 00
Feed		7,500 00
Furniture		500 00
Harness and repairs		800 00
Horse shoeing		1,200 00
Hose		2,000 00
Horses		3,000 00
Gas light		1,000 00
Medicines		100 00
Office expenses (including pay of messenger)		600 00
Washing		1,300 00
Fuel		1,500 00
Bells		250 00
Oils, grease, &c		1,250 00
Miscellaneous		650 00
Insurance premium on lives of members		2,250 00
Ground rents		1,200 00
Police and Fire Alarm Telegraph—		
Salaries	$8,400 00	
Battery and repairs	1,000 00	
		9,400 00
		$156,000 00

DO NOT CIRCULATE

UNIV. OF MD COLLEGE PARK
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N. MANCHESTER,
INDIANA